

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A hydrogen generating method for generating hydrogen-containing gas by decomposing fuel containing an organic compound, the method comprising

    providing a fuel electrode in contact with one surface of a partition membrane,

    supplying fuel containing an organic compound and water to the fuel electrode, and

    providing an oxidizing electrode in contact with the other surface of the partition membrane, supplying an oxidizing agent to the oxidizing electrode, wherein fuel containing the organic compound is decomposed and hydrogen-containing gas is generated on the fuel electrode.

2. (Currently amended) The hydrogen generating method as described in Claim 1 ~~whereby it is possible to generate comprising generating the~~ hydrogen-containing gas under open-circuit condition where ~~conditions wherein~~ no electric energy is withdrawn ~~to outside~~ from a hydrogen generating cell constituting a hydrogen generating system, and no electric energy is supplied ~~from outside~~ to the hydrogen generating cell.

3. (Currently amended) The hydrogen generating method as described in Claim 1 ~~whereby it is possible to generate comprising generating the~~ hydrogen-containing gas on the fuel electrode by decomposing

fuel containing an organic compound while withdrawing electric energy ~~to outside~~ from the hydrogen generating cell with the fuel electrode serving as a negative electrode and the oxidizing electrode as a positive electrode.

4. (Currently amended) The hydrogen generating method as described in Claim 1 ~~whereby it is possible to generate comprising generating the~~ hydrogen-containing gas on the fuel electrode by decomposing fuel containing the organic compound while providing electric energy ~~from outside~~ to the hydrogen generating cell with the fuel electrode serving as cathode and the oxidizing electrode as anode.

5. (Previously Presented) The hydrogen generating method as described in claim 1 wherein the organic compound is alcohol.

6. (Original) The hydrogen generating method as described in Claim 5 wherein the alcohol is methanol.

7. (Previously Presented) The hydrogen generating method as described in claim 1 wherein the oxidizing agent is gas containing oxygen, or oxygen.

8. (Original) The hydrogen generating method as described in Claim 5 wherein the oxidizing agent is gas containing oxygen, or oxygen.

9. (Previously Presented) The hydrogen generating method as described in claim 1 wherein the oxidizing agent is liquid containing hydrogen peroxide.

10. (Original) The hydrogen generating method as described in Claim 5 wherein the oxidizing agent is liquid containing hydrogen peroxide.

11. (Currently amended) A hydrogen generating system for generating hydrogen-containing gas by decomposing fuel containing an organic compound, the system comprising:

a partition membrane,

a fuel electrode provided on one surface of the partition membrane,

means for supplying fuel containing an organic compound and water to the fuel electrode,

an oxidizing electrode provided on the other surface of the partition membrane,

means for supplying an oxidizing agent to the oxidizing electrode, and

means for generating collecting hydrogen-containing gas generated on the fuel electrode to collect the gas and wherein the system is configured to operate in a plurality of configurations wherein one of said configurations comprises an open circuit configuration wherein no current is supplied to either the fuel electrode or the oxidizing electrode.

12. (Currently amended) The hydrogen generating system as described in Claim 11 which exists as an wherein, in the open circuit configuration neither the fuel electrode nor the oxidizing electrode are connected to, having neither means for withdrawing electric energy to outside from a hydrogen generating cell constituting the hydrogen generating system, nor means for providing electric energy from outside to the hydrogen generating cell.

13. (Currently amended) The hydrogen generating system as described in Claim 11 ~~which has wherein,~~ in a first closed circuit configuration the oxidizing electrode and the fuel electrode are connected to means for withdrawing electric energy from the hydrogen generating cell ~~to outside~~ with the fuel electrode serving as a negative electrode and the oxidizing electrode as a positive electrode.

14. (Currently amended) The hydrogen generating system as described in Claim 11 ~~which has wherein~~ in a second closed circuit configuration the oxidizing electrode and the fuel electrode are connected to means for providing external electric energy ~~from outside~~ with the fuel electrode serving as cathode and the oxidizing electrode as anode.

15. (Original) The hydrogen generating system as described in Claim 11 wherein voltage between the fuel electrode and the oxidizing electrode is 200 to 1000 mV.

16. (Original) The hydrogen generating system as described in Claim 12 wherein voltage between the fuel electrode and the oxidizing electrode is 300 to 800 mV.

17. (Original) The hydrogen generating system as described in Claim 13 wherein voltage between the fuel electrode and the oxidizing electrode is 200 to 600 mV.

18. (Original) The hydrogen generating system as described in Claim 13 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas

are/is adjusted by varying the volume of electric energy withdrawn from the hydrogen generating unit.

19. (Original) The hydrogen generating system as described in Claim 14 wherein voltage between the fuel electrode and the oxidizing electrode is 300 to 1000 mV.

20. (Original) The hydrogen generating system as described in Claim 14 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas are/is adjusted by varying the volume of electric energy provided.

21. (Previously Presented) The hydrogen generating system as described in claim 11 wherein the evolution volume of hydrogen-containing gas is adjusted by varying voltage between the fuel electrode and the oxidizing electrode.

22. (Previously Presented) The hydrogen generating system as described in claim 11 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas are/is adjusted by varying the supply volume of the oxidizing agent.

23. (Previously Presented) The hydrogen generating system as described in claim 11 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas are/is adjusted by varying the concentration of the oxidizing agent.

24-26. (Canceled)

27. (Previously Presented) The hydrogen generating system as described in claim 11 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas are/is adjusted by varying the supply volume of fuel containing an organic compound and water.

28. (Previously Presented) The hydrogen generating system as described in claim 11 wherein voltage between the fuel electrode and the oxidizing electrode and/or the evolution volume of hydrogen-containing gas are/is adjusted by varying the concentration of fuel containing an organic compound and water.

29-31. (Canceled)

32. (Previously Presented) The hydrogen generating system as described in claim 11 wherein the operation temperature is not higher than 100°C.

33. (Original) The hydrogen generating system as described in Claim 32 wherein the operation temperature is between 30 and 90°C.

34-38. (Canceled)

39. (Previously presented) The hydrogen generating system as described in claim 11 wherein the partition membrane is a proton conducting solid electrolyte membrane.

40. (Original) The hydrogen generating system as described in Claim 39 wherein the proton conducting solid electrolyte membrane is a perfluorocarbon sulfonate-based solid electrolyte membrane.

41-42. (Canceled)

43. (Previously presented) The hydrogen generating system as described in claim 11 wherein a catalyst applied to the fuel electrode is made of platinum-ruthenium alloy supported by carbon powder serving as a base.

44-46. (Canceled)

47. (Previously presented) The hydrogen generating system as described in claim 11 wherein a catalyst applied to the oxidizing electrode is made of platinum supported by carbon powder serving as a base.

48-51. (Canceled)

52. (Previously Presented) The hydrogen generating system as described in claim 11 comprising means for circulating fuel containing an organic compound and water.

53-54. (Canceled)

55. (Previously Presented) The hydrogen generating system as described in claim 11 comprising a carbon dioxide absorbing portion for absorbing carbon dioxide contained in the hydrogen-containing gas.

56-57. (Canceled)